22 ATTACHMENT 15 – REDUCE DELTA WATER DEPENDENCE

22.1 Region's nexus with Sacramento-San Joaquin Delta Water

There are four primary connections that the Kaweah River Basin IRWM region has with water supplies from the Sacramento-San Joaquin Delta. The first is that Tulare County holds a Federal diversion contract for waters that flow through the Sacramento-San Joaquin Delta. Tulare County is not able to take physical delivery of this water, but exchange agreements for Friant Division CVP water have been arranged so that Tulare County and its subcontractors could take delivery of the exchanged waters. This type of exchange is not uncommon as there are several Cross-Valley Contractors that are located in Fresno and Tulare Counties who have been unable to take direct delivery of the available supplies.

The second connection with the water supplies from the Sacramento-San Joaquin Delta is through the Friant Division of the CVP and the long-term contractors within the Kaweah River Basin IRWM region. The Friant Division was created through a very significant long-term water resource exchange between a group of San Joaquin River water right holders (Exchange Contractors) and the Bureau of Reclamation. The exchange allowed the Bureau of Reclamation to divert the water in the San Joaquin River, store it in Millerton Reservoir, and then deliver it through either the Madera Canal or the Friant-Kern Canal. In exchange, the Exchange Contractors were provided high priority water from the Sacramento-San Joaquin Delta in place of the San Joaquin River supplies that they made available. If the Bureau of Reclamation cannot make this exchanged water available to the Exchange Contractors as per their agreement, the Bureau of Reclamation is required to release water from Millerton Reservoir and make the necessary delivery to the Exchange Contractors through the San Joaquin River channel. The Friant Division long-term contractors within the Kaweah River Basin IRWM region are Kaweah Delta WCD, Ivanhoe ID, Exeter ID, Tulare ID, Stone Corral ID, Lindmore ID, Lindsay-Strathmore ID and the City of Lindsay.

The third connection with the waters supplies from the Sacramento-San Joaquin Delta is the Friant Division CVP supplies that are delivered through the San Joaquin River channel to the confluence of the Merced River for San Joaquin River Restoration purposes. Currently, these flows are not fully implemented restoration flows, but are smaller "interim" flows that will be released until the modifications to the San Joaquin River channel will safely allow for full restoration flows to be released. When these deliveries are made and water makes it to the confluence of the Merced River, the water

is still technically available to Friant Division CVP contractors. These contractors can either chose to market the available supplies to districts in the San Luis division of the CVP or State Water Project contractors, or attempt to have the supplies delivered back to them through exchanges. Last year, several Friant Division CVP contractors successfully exchanged these supplies with State Water Project contractors for local river supplies in an effort to reduce the level of San Joaquin River Restoration impacts.

Lastly, the most significant nexus for the southern San Joaquin Valley is the Sacramento-San Joaquin Delta waters that are delivered to the Tulare Lakebed farming interests. The reason that this nexus is likely the most significant for the southern San Joaquin Valley is that, although there are different groundwater subbasins in this area, the groundwater resources in the larger San Joaquin Valley groundwater basin are connected throughout the area (meaning that pumping in the Tulare Lakebed area impacts groundwater resources in the Kaweah River Basin IRWM region). The Kaweah groundwater subbasin (the groundwater subbasin within the Kaweah River Basin IRWM region) is a part of the larger San Joaquin Valley groundwater basin. The Tulare Lake groundwater subbasin is immediately west of the Kaweah groundwater subbasin and the groundwater resources of the two subbasins are hydraulically and hydrologically connected. The groundwater aquifers that are used by most growers in the southern San Joaquin Valley are primarily confined aquifers west of Highway 99, and therefore groundwater recharge efforts above the confining layer west of Highway 99 do little to replenish the confined supplies. The Tulare Lake area has useable groundwater around the perimeter of the Tulare Lakebed where these areas connect to other groundwater sub-basins, like the Kaweah sub-basin. However, the center of the Tulare Lakebed is devoid of useable groundwater and is often described as a solid clay plug. For this reason, Tulare Lakebed farming interests have developed several large well fields in areas of usable groundwater and these are used to extract water and deliver some to the center of the Tulare Lakebed where groundwater isn't available.

The Tulare Lakebed is a major farming area in the southern San Joaquin Valley that spans some 500,000 acres, primarily in southern Kings County. The well field systems are large enough to significantly impact groundwater resources upgradient or to the south, north and east if they are run for long periods during the year. This naturally occurs from time to time when very dry hydrologic years occur, but the affects are usually reversed when other wetter years occur and replenish groundwater supplies.

Sacramento-San Joaquin Delta surface water began to be imported under contract to Tulare Lake Basin Water Storage District (Tulare Lake Basin WSD) and the Tulare Lakebed farming interests in the mid-1970s and this significantly reduced the declining

groundwater levels that were being observed throughout the San Joaquin Valley groundwater basin and all subbasins. Recent reductions in surface water deliveries to State Water Project contractors due to Sacramento-San Joaquin Delta pumping restrictions in combination with a few consecutive drier hydrologic years has shown that the loss of this surface water supply significantly shifts the Kaweah groundwater basin out of balance. Over the last few years, new depths to groundwater have been reached in several subbasins within the San Joaquin Valley groundwater basin and that is due in part to the reduced Sacramento-San Joaquin Delta surface water deliveries to the Tulare Lakebed farming interests.

22.2 IRWM Plan's Role in Reducing Dependence on Delta Water

The Kaweah River Basin IRWM Plan includes the following water management elements:

1. Programs for water supply reliability, water construction and water use efficiency.
2. Storm water capture, storage, treatment and management.
3. Groundwater recharge and management projects.

All of these water management elements are used to establish a flexible and dependable water supply that is consistent with the water availability issues that are common to California hydrology. Collectively, the implementation of these elements will reduce dependence on Sacramento-San Joaquin Delta water supplies by improving the flexibility of the management systems in place to use surface water when it is available and by improving the reliability of local supplies so that non-local supplies are less necessary for the region's groundwater to stay in balance.

Improving the reliability of groundwater and eliminating groundwater overdraft in the region is one of the Kaweah River Basin IRWM plan goals[22]. The Kaweah River Basin IRWM group imports surface water and utilizes local supplies for groundwater recharge in the area east of Highway 99 so that groundwater resources are replenished both in the confined and unconfined aquifers and that those groundwaters flow downgradient throughout the region. To this end, Kaweah Delta WCD has acquired the Lower Kaweah River surface water right from Tulare Lake farming interests in the last few years so that these supplies can be beneficially used in a way that makes water

[22] This is a goal in the Groundwater Management Plan and one of the reasons why the Water Resources Investigation (a regional water balance report) is regularly conducted.

supplies more reliable throughout the region[23]. The Kaweah River Basin IRWM group's hope is that groundwater declines can be eliminated by making the groundwater more reliable and accomplishing more effective groundwater recharge with waters that would otherwise potentially cause damage to crops and communities. This increased groundwater reliability would significantly reduce dependency on water supplies from the Sacramento-San Joaquin Delta.

The Kaweah River Basin IRWM Region is a conjunctive use region. There are portions in the east of the region that do not have usable groundwater supplies (LSID, SCID, IID, EID), but the majority of the lands within the region conjunctively use surface water and groundwater. This means that, for the majority of the region, groundwater is the only reliable supply of water available and surface water is used when possible to ensure that groundwater supplies are protected for when they are eventually needed (times of drought). Therefore, conjunctive use is a key water management element in the Kaweah River Basin IRWM plan. Consistent with this, the non-local surface water supplies that are available to conjunctive use districts are used to offset groundwater pumping and increase the reliability of local groundwater resources. Non-local wet year water is often imported to the area even thought local supplies are plentiful because the region is principally reliant on groundwater resources in dry years. However, the non-local water is not a supply that the majority of lands in the region can rely or depend on.

Over the last few years, the Kaweah River Basin IRWM plan has supported projects by member agencies that have the ability to recharge groundwater in areas that will benefit the confined groundwater aquifers throughout the region, that could put greater amounts of local river supplies to beneficial use and that could make the region less dependent on Sacramento-San Joaquin Delta water. Recent projects of this kind are listed below:

- 2002-Joint effort/program between Tulare ID, Kaweah Delta WCD and the City of Visalia to compensate Tulare ID for groundwater recharge through their earthen unlined Main Intake Canal that benefits regional groundwater resources;
- 2004-Kaweah Delta WCD's Peoples Basin project groundwater recharge along Packwood Creek which is a collaborative flood control project with the City of Visalia;
- 2005-Kaweah Delta WCD's Oakes Basin project along Mill and Packwood Creeks which is a collaborative flood control project with the City of Visalia;

[23] This effort is a priority under the region's Surface Water Management goals.

- 2006-City of Visalia's Basin is a 40-acre groundwater recharge project downstream of Mill Creek and Packwood Creek which is a collaborative flood control effort with the Kaweah Delta WCD;
- 2008-Tulare ID's Plum Basin project which is a collaborative effort with the City of Tulare to develop additional groundwater recharge capacity in the region;
- 2009-Kaweah Delta WCD's Police Station Basin project was an effort to improve the City of Visalia's ability to divert Packwood Creek flows for groundwater recharge and improve the City's flood control protection;
- 2009-City of Visalia and Tulare ID proposed surface water exchange program that would allow for the City of Visalia to recharge waters east of Highway 99 and upgradient of the City;
- 2010-City of Visalia program with Tulare ID to purchase excess local river water and recharge it in Packwood and Cameron Creeks which are both east of Highway 99 and upgradient of the City of Visalia. This program encourages Tulare ID to use these creeks that have high infiltration rates, to provide the City with groundwater recharge in advantageous locations.

Given the pumping restrictions currently imposed on Sacramento-San Joaquin Delta pumping, districts in the Kaweah River Basin IRWM group are attempting to rely on Sacramento-San Joaquin Delta water supplies to a reduced level. Local river supplies are currently viewed as being much more reliable in both the short and long-term. Also, local projects that are less entangled in statewide water politics are viewed as more sustainable in the long-term and more adaptive to changing local needs.

22.3 Assurances regarding IRWM Plan Modifications

If the proposal from the Kaweah River Basin IRWM region is selected for grant funding and they are required to update their IRWM Plan within a two-year period, the existing plan's priorities will remain in place and the focus on conjunctive use within the region will remain a central focus in the updated plan. Since in the majority of the region groundwater is the only reliable supply of water available, conjunctive use and maximizing the benefits from local surface water supplies is a vital management practice that keeps the local groundwater supplies available for use during extended drought periods. As mentioned previously, given the pumping restrictions currently imposed on Sacramento-San Joaquin Delta diversions, districts in the Kaweah River Basin IRWM group are currently attempting to rely on Sacramento-San Joaquin Delta water supplies on a reduced basis. Local projects that are less entangled in statewide water politics are viewed as more sustainable in the long-term and more adaptive to changing local needs.